

1 **WHAT IS CLAIMED IS:**

2 1. A cartridge assembly of a water cooled radiator for cooling a central
3 processor in a computer, comprising:

4 a shell (10) with a face panel (102) of dimensions that can fit into a 5.25”
5 drive bay of the computer front panel for easy installation into the computer;

6 a water tank (20) for holding water and being installed behind the face
7 panel (102) inside the shell (10), wherein the water tank (20) has a plug (22) that
8 can be removed for refilling the water tank with water;

9 a booster pump (30) being installed behind the water tank (20) inside the
10 shell (10) for boosting water pressure, with piping (32) interconnecting between
11 the booster pump (30) and water tank (20); wherein

12 the cartridge assembly being connected by the circulation piping (32)
13 into a casing of the computer to form an intake pipe (34) and a return pipe (36),
14 wherein the intake pipe (34) is for directing inflow water between the booster
15 pump (30) and the central processor, and the return pipe (36) is for directing
16 return water between the water tank (20) and the central processor.

17 2. The cartridge assembly as claimed in claim 1, wherein the face panel
18 (102) of the cartridge assembly has a transparent window (14) for visually
19 monitoring of a water level in the water tank (20).

20 3. The cartridge assembly as claimed in claim 1, wherein the face panel
21 (102) has a push button (104) with back end fixed to the front wall of the water
22 tank (20), and two handles (12) are respectively mounted on two sides of the face
23 panel (102), each handle (12) having an angular bend.

24 4. The cartridge assembly as claimed in claim 1, wherein the cartridge

1 assembly has a lock-and-release mechanism to manage the refilling of the water
2 tank (20), by means of four first springs (122), a second spring (134), an
3 anchoring plate (13), and a catch box (202), wherein

4 each first spring (122) is mounted on a respective one of four legs at the
5 back end of each handle (12) connecting between the end of the handle (12) and
6 the water tank (20);

7 the anchoring plate (13) having a column (132) in the center is fixed on
8 the shell wall using the bottom portion for mounting the second spring (134);

9 the second spring (134) is mounted between the column (132) of the
10 anchoring plate (13) and the back wall of the water tank (20); and

11 the catch box (202) is fixed on the shell wall by using the bottom portion,
12 and the catch box (202) has a front opening corresponding to the position of a
13 protruding rod (204) fixed on the back wall of the water tank (20), the protruding
14 rod (204) having a ball at a far end of the protruding rod (204).

15 5. The cartridge assembly as claimed in claim 2, wherein the cartridge
16 assembly has a lock-and-release mechanism to manage the refilling of the water
17 tank (20), by means of four first springs (122), a second spring (134), an
18 anchoring plate (13), and a catch box (202), wherein

19 each first spring (122) is mounted on a respective one of four legs at a
20 back end of each handle (12) connecting between the handle (12) and the water
21 tank (20);

22 the anchoring plate (13) having a column (132) in the center, the column
23 (132) fixed on the shell wall using the bottom portion thereof for mounting the
24 second spring (134);

1 the second spring (134) is mounted between the column (132) of the
2 anchoring plate (13) and the water tank (20); and

3 the catch box (202) is fixed on the shell wall by using the bottom portion,
4 and the catch box (202) has a front opening corresponding to the position of a
5 protruding rod (204) fixed on the back wall of the water tank (20), the protruding
6 rod (204) having a ball at a far end of the protruding rod (204).

7 6. The cartridge assembly as claimed in claim 3, wherein the cartridge
8 assembly has a lock-and-release mechanism to manage the refilling of the water
9 tank (20), by means of four first springs (122), a second spring (134), an
10 anchoring plate (13), and a catch box (202), wherein

11 each first spring (122) is mounted on a respective one of four legs at the
12 back end of each handle (12) connecting between the end of the handle (12) and
13 the water tank (20);

14 the anchoring plate (13) having a column (132) in the center of the
15 anchoring plate, wherein the column (132) is fixed on the shell wall using the
16 bottom portion for mounting the second spring (134);

17 the second spring (134) is mounted between the column (132) of the
18 anchoring plate (13) and the back wall of the water tank (20); and

19 the catch box (202) is fixed on the shell wall using the bottom portion,
20 and the catch box (202) has a front opening corresponding to the position of a
21 protruding rod (204) fixed on the back wall of the water tank (20), the protruding
22 rod (204) having a ball at a far end of the protruding rod (204).